APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,599	10/06/2000	Richard R. Wessman	OR00-03802	1833

22835   7590   12/22/2003

PARK, VAUGHAN & FLEMING LLP
508 SECOND STREET
SUITE 201
DAVIS, CA   95616

EXAMINER
BETIT, JACOB F

ART UNIT	PAPER NUMBER
2175	4

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

   A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _25-52_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _25-52_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _3_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Specification

1.   The arrangement of the disclosed application does not conform with 37 CFR

1.77(b).

The sections headings are underlined, boldfaced, and appear in lower case

lettering throughout the disclosed specification. Section headings should appear in

UPPERCASE format, and they should not be <u>underlined</u> and/or **boldfaced**. The

underlined and boldfaced headings should be replaced with a standard font, and the

lowercase format lettering should be replaced with uppercase format. Appropriate

corrections are required according to the guidelines provided below:

2.   The following guidelines illustrate the preferred layout for the specification of a

utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification
As provided in 37 CFR 1.77(b), the specification of a utility application should
include the following sections in order. Each of the lettered items should appear in
upper case, without underlining or bold type, as a section heading. If no text follows the
section heading, the phrase "Not Applicable" should follow the section heading:

    (a) TITLE OF THE INVENTION.
    (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
    (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
        DEVELOPMENT.
    (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
        COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer
        program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),

and tables having more than 50 pages of text are permitted to be
submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
"Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37
    CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A
    "Sequence Listing" is required on paper if the application discloses a
    nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if
    the required "Sequence Listing" is not submitted as an electronic
    document on compact disc).

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in a patent granted on an application for patent by another filed in the
> United States before the invention thereof by the applicant for patent, or on an international application
> by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
> title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2.   Claims 25, 34, and 43 are rejected under 35 U.S.C. 102(e) as being anticipated

by <u>Zizzi</u> (U.S. patent No. 6,185,681 B1).

        As to claim 25 <u>Zizzi</u> teaches a method for managing encryption within a database

system, wherein encryption is performed automatically and transparently to a user of

the database system (see abstract), the method comprising:

        receiving a request at the database system to store data in the database system

(see figure 4, step 415);

        wherein the request is directed to storing data in a portion of the database

system that has been designated as encrypted (see figure 4 step 430, where the

decision is "Yes");

        in response to receiving the request, automatically encrypting data within the

database system using an encryption function to produce an encrypted data (see figure

4, step 460); and

        storing the encrypted data in the database system (see column 7, lines 15-21).

        As to claim 34, <u>Zizzi</u> teaches a computer-readable storage medium storing

instructions that when executed by a computer causes the computer to perform a

method for managing encryption within a database system, wherein encryption is

performed automatically and transparently to a user of the database system (see

abstract, where "instructions" are read on "software module", and it is inherent that the

software most be stored on some medium), the method comprising:

receiving a request at the database system to store data in the database system
(see figure 4, step 415);

wherein the request is directed to storing data in a portion of the database
system that has been designated as encrypted (see figure 4, step 430, where the
decision is "Yes");

in response to receiving the request, automatically encrypting data within the
database system using an encryption function to produce an encrypted data (see figure
4, step 460); and

storing the encrypted data in the database system (see column 7, lines 15-21).

As to claim 43, Zizzi teaches an apparatus that facilitates managing encryption
within a database system, wherein encryption is performed automatically and
transparently to a user of the database system (see abstract), comprising:

a receiving mechanism that is configured to receive a request at the database
system to store data in the database system (see column 8, lines 32-41);

wherein the request is directed to storing data in a portion of the database
system that has been designated as encrypted (see figure 4, step 430, where the
decision is "Yes");

an encrypting mechanism that is configured to automatically encrypt data within
the database system using an encryption function to produce an encrypted data (see
column 9, lines 20-31): and

a storing mechanism that is configured to store the encrypted data in the

database system (see column 7, lines 15-21).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 26-28, 33, 35-37, 42, 44-46, and 51 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Zizzi (U.S. patent No. 6,185,681 B1) in view of Sutter (U.S.

patent No. 5,924,094).

As to claims 26, 35, and 44, Zizzi teaches

wherein the encryption function uses a key stored in a keyfile managed by a

security administrator (see column 9, lines 25-30); and

wherein the encrypted data is stored using a storage function of the database

system (see column 9, lines 32-37).

Zizzi does not teach wherein the portion of the database system that has been

designated as encrypted includes a column of the database system.

Sutter teaches wherein the portion of the database system that has been

designated as encrypted includes a column of the database system (see column 59,

lines 10-16).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi to include wherein the portion of the database system that has been designated as encrypted includes a column of the database system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi by the teachings of Sutter because wherein the portion of the database system that has been designated as encrypted includes a column of the database system would keep unauthorized users from deciphering the encrypted column of the database system.

As to claims 27, 36, and 45, Zizzi as modified, teaches further comprising:

receiving a request to retrieve data from the column of the database system (see Zizzi, column 9, lines 44-59);

if the request to retrieve data is received from a database administrator, preventing the database administrator from decrypting the encrypted data; if the request to retrieve data is received from the security administrator, preventing the security administrator from decrypting the encrypted data; and if the request to retrieve data is from an authorized user of the database system, allowing the authorized user to decrypt the encrypted data (see Zizzi, column 9, lines 40-43, where any user that does not have authorization to decrypt the data will not be authorized to decrypt it).

As to claims 28, 37, and 46, Zizzi as modified teaches data encryption standard

(DES) and triple DES as a mode of encryption (see Zizzi, column 3, lines 29-37).

Zizzi as modified does not teach wherein the security administrator selects a mode of encryption for the column.

Sutter teaches wherein the security administrator selects a mode of encryption for the column (see column 59, lines 11-14).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi as modified, to include wherein the security administrator selects a mode of encryption for the column.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi as modified, by the teachings of Sutter because wherein the security administrator selects a mode of encryption for the column would allow the security manager to select various methods of encryption strengths depending on the importance of the file.

As to claims 33, 42, and 51, Zizzi as modified, teaches wherein upon receiving a request from the security administrator specifying the column to be encrypted (see Sutter, column 60, lines 1-26, where "administrator" is read on "designer"), if the column currently contains data, the method further comprises:

decrypting the column using an old key if the column was previously encrypted (it is obvious to one skilled in the art that the column would have to be decrypted before the old key could be discarded); and

encrypting the column using a new key (see Sutter, column 60, lines 1-19).

5.   Claims 29, 38, and 47 rejected under 35 U.S.C. 103(a) as being unpatentable

over Zizzi (U.S. patent No. 6,185,681 B1) in view of Sutter (U.S. patent No. 5,924,094)

as applied to claims 26-28, 33, 35-37, 42, 44-46, and 51 above, and further in view of

Brogliatti et al. (U.S. patent No. 6,564,225 B1).

        As for claims 29, 38, and 47, Zizzi as modified, does not teach wherein the

security administrator, a database administrator, and a user administrator are distinct

roles, and wherein a person selected for one of these roles is not allowed to be selected

for another of these roles.

        Brogliatti et al. teaches wherein the security administrator, a database

administrator, and a user administrator are distinct roles, and wherein a person selected

for one of these roles is not allowed to be selected for another of these roles (see

column 5, lines 10-24).

        Therefore, it would have been obvious to a person having ordinary skill in the art

at the time the invention was made to have modified Zizzi as modified, to include

wherein the security administrator, a database administrator, and a user administrator

are distinct roles, and wherein a person selected for one of these roles is not allowed to

be selected for another of these roles.

        It would have been obvious to a person having ordinary skill in the art at the time

the invention was made to have modified Zizzi as modified, by the teachings of Brogliatti

et al. because wherein the security administrator, a database administrator, and a user

administrator are distinct roles, and wherein a person selected for one of these roles is not allowed to be selected for another of these roles would protect important corporate assets (see <u>Brogliatti et al.</u>, column 5, lines 10-14).

6.   Claims 30-32, 39-41, and 48-50 rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Zizzi</u> (U.S. patent No. 6,185,681 B1) in view of <u>Sutter</u> (U.S. patent No. 5,924,094) as applied to claims 26-28, 33, 35-37, 42, 44-46, and 51 above, and further in view of <u>Bjerrum et al.</u> (U.S. patent No. 5,311,595).

As to claims 30, 39, and 48, <u>Zizzi</u> as modified, teaches wherein managing the keyfile includes, but is not limited to:

establishing a relationship between a key identifier and he key stored in the keyfile (see <u>Zizzi</u>, column 6, lines 3-6);

storing the keyfile in one of,

an encrypted file in the database system, and a location separate from the database system (see <u>Zizzi</u>, column 6, lines 1-2);

Zizzi as modified, does not teach creating the keyfile; establishing a plurality of keys to be stored in the keyfile; and moving an obfuscated copy of the keyfile to a volatile memory within a server associated with the database system.

<u>Bjerrum et al.</u> teaches creating the keyfile; establishing a plurality of keys to be stored in the keyfile (see column 23, lines 37-44); and moving an obfuscated copy of the keyfile to a volatile memory within a server associated with the database system (see

column 20, line 61 throught column 21, line 9).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi as modified, to include creating the keyfile; establishing a plurality of keys to be stored in the keyfile; and moving an obfuscated copy of the keyfile to a volatile memory within a server associated with the database system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi as modified, by the teachings of Bjerrum et al. because creating the keyfile; establishing a plurality of keys to be stored in the keyfile; and moving an obfuscated copy of the keyfile to a volatile memory within a server associated with the database system would establish a tamper proof method of encrypting a file with a secure encryption key (see Bjerrum et al., column 21, lines 2-9).

As to claims 31, 40, and 49, Zizzi as modified, does not teach wherein the key identifier associated with the column is stored as metadata associated with a table containing the column within the database system.

Sutter teaches wherein the key identifier associated with the column is stored as metadata associated with a table containing the column within the database system (see column 59, line 29 through 60, line 25).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Zizzi as modified, to include wherein the key identifier associated with the column is stored as metadata associated

with a table containing the column within the database system.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Zizzi</u> as modified, by the teachings of <u>Sutter</u> because wherein the key identifier associated with the column is stored as metadata associated with a table containing the column within the database system would allow the same key to be used with the same key algorithm to encrypt multiple columns of the same table or multiple columns in different tables (see <u>Sutter</u>, column 60, lines 20-24).

As to claims 32, 41, and 50 <u>Zizzi</u> as modified, teaches further comprising establishing encryption parameters for the column (see <u>Sutter</u>, column 60, lines 1-10), wherein encryption parameters include encryption mode, key length, and integrity type (see <u>Sutter</u>, column 59, line 10-15, where different types of encryption are used to verify the integrity of the file) by:

entering encryption parameters for the column manually (see <u>Zizzi</u>, column 7, line 64 through column 8, line 6); and

recovering encryption parameters for the column from a profile table in the database system (see <u>Zizzi</u>, column 8, lines 59-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob F. Betit whose telephone number is (703) 305-3735. The examiner can normally be reached on Monday through Friday 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici can be reached on (703) 305-3830. The fax phone number

for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

jfb
December 11, 2003

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100